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EXAMINER

RIVERO, ALEJANDRO

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2618

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,766

Applicant(s)

LAROIA ET AL.

Examiner

Alejandro Rivero

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 27, 28 and 33-35 is/are rejected.
- 7) ☒ Claim(s) 8-26 and 29-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of proper language and format for an abstract of the disclosure. The abstract should be in narrative and limited to a single paragraph within the range of 50 to 150 words. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details. The language should be clear, concise and not repeat information from the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it contains the phrase "are described" (in line 1), which can be implied. Correction is required. See MPEP § 608.01(b).

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: METHOD OF TRANSMITTING PILOT TONES IN A MULTI-SECTOR CELL, INCLUDING NULL PILOT TONES, FOR GENERATING CHANNEL QUALITY INDICATORS.

3. The disclosure is objected to because of the following informalities:

In line 23 of page 11, replace "provide" with "provided".

In line 30 of page 13, replace "provide" with "provided".

In line 10 of page 14, replace "Memory 1320" with "Memory 1308".

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In line 3 of page 15, replace "out at" with "out".

In line 7 of page 17, replace "traffic 102" with "traffic 104".

In line 9 of page 18, replace "axis 317" with "axis 301".

In line 11 of page 26, replace "pilot tone 728" with "pilot tone 727".

In line 22 of page 30, replace "S1 929" with "S1 925".

In line 22 of page 33, replace "second S2" with "second S1".

In line 9 of page 36, replace "determine" with "determined".

Lines 20-22 of page 38 need revision.

In line 27 of page 40, replace "1700" with "1750".

In line 29 of page 42, replace "1816" with "1826".

In line 30 of page 43, replace "is transmits" with "transmits".

Lines 18-21 of page 44 need revision.

In line 16 of page 45, replace "such a" with "such as".

Appropriate correction is required.

Drawings

4. The drawings are objected to because of the following minor informalities:

In figure 2, element 211 is not mentioned in the specification.

In figure 3, element 301 is not mentioned in the specification.

In cell 921 of figure 9, replace the label "907" with "927".

In cell 941 of figure 9, replace the label "917" with "947".

In figure 16, element 1600 is not mentioned in the specification.

In figure 17, elements 1704, 1706, 1708 and 1710 are not mentioned in the specification.

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Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claims 8, 27 and 30 are objected to because of the following informalities:

In line 1 of claim 8, the examiner respectfully suggests replacing "wherein further comprising" with "further comprising".

In line 6 of claim 27, the examiner respectfully suggests replacing "first pilot" with "first pilot signal".

In line 5 of claim 30, the examiner respectfully suggests replacing "second fifth" with "second, fifth".

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Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 24 recites the limitations "*said* second tone", "*said* third and fourth symbol times" and "*said* third pilot signal" in lines 2, 3 and 4, respectively. There is insufficient antecedent basis for these limitations in the claim.

Claim 25 recites the limitations "*said* third tone", "*said* fifth and sixth symbol times", "*the* fifth pre-selected" and "*the* fifth and sixth pilots" in lines 2, 3, 5 and 5-6, respectively. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-7, 27-28 and 33-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Baum et al. (US 5,867,478).

Consider claim 1, Baum et al. disclose a method of transmitting pilot tones in a multi-sector cell including at least a first sector and a second sector (Abstract, column 5 lines 54-63, element 300 of figure 3), the second sector being located adjacent said first sector (element 300 of figure 3), the method comprising: transmitting, using a first tone (frequency/sub-carrier), in said first sector during a first symbol time (frame/ baud interval) a first pilot signal (pilot code) having a first pre-selected transmission power (Column 9 line 37- column 10 line 57); and transmitting, using said first tone, in said second sector during a second symbol time, which overlaps said first symbol time, a second pilot signal having a second pre-selected transmission power which is different from said first pre-selected transmission power (Column 9 line 37- column 10 line 57, where Baum et al. disclose transmitting null baud/symbols).

Consider claim 2, Baum et al. disclose all the limitations as applied to claim 1 above and also disclose wherein the second pre-selected transmission power is zero, said second pilot being a NULL pilot signal (Column 9 lines 44-48).

Consider claim 3, Baum et al disclose all the limitations as applied to claim 1 above and also disclose transmitting, using a second tone (frequency/sub-carrier), in said first sector during a third symbol time (frame/ baud interval) a third pilot signal (pilot code) having a third pre-selected transmission power; and transmitting, using said second tone, in said second sector during a fourth symbol time, which overlaps said third symbol time, a fourth pilot signal having a fourth pre-selected transmission power which is different from said third pre-

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selected transmission power (Column 9 line 37- column 10 line 57, figures 7-12, where Baum et al. disclose an orthogonal broadcast sequence including transmitting null baud/symbols).

Consider claims 4 and 5, Baum et al. disclose all the limitations as applied to claim 3 above and also disclose wherein said second pre-selected transmission power and said third preselected transmission power are the same (zero), said second and third pilot signals being NULL pilot signals (Column 9 lines 44-48).

Consider claims 6 and 7, Baum et al. disclose all the limitations as applied to claim 1 above and also disclose wherein said first and third symbol times are the same or do not overlap; and wherein said first and second tones are different or the same (Column 9 line 37- column 10 line 57, figures 7-12, where Baum et al. disclose several pilot codes transmitted by base unit during four baud intervals of a frame and different tones (pilot and data) are sometimes used).

Consider claim 27, Baum et al. disclose a method of transmitting pilot signals in a multi-sector cell, the multi-sector cell including at least first, second and third sectors, each of the first, second and third sectors being located adjacent at least one other one of said first, second and third sectors in said cell (Abstract, column 5 lines 54-63, element 300 of figure 3), the method comprising: transmitting during at least a portion of a first symbol time (frame/baud interval): a first pilot signal (pilot code) on a first tone (frequency/sub-carrier) in the first sector using a first pre-selected transmission power (Column 9 line 37- column 10 line 57, where Baum et al. disclose transmitting null baud/symbols); a second

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pilot signal on the first tone in the second sector using a second pre-selected transmission power which is different from said first pre-selected amount of transmission power (Column 9 line 37- column 10 line 57); and a third pilot signal on the first tone in the third sector using a third pre-selected amount of transmission power (Column 9 line 37- column 10 line 57, where Baum et al. disclose transmitting null baud/symbols).

Consider claim 28, Baum et al. disclose all the limitations as applied to claim 27 above and also disclose wherein the first and third pre-selected amounts of transmission power are non-zero and are the same (Column 9 line 37- column 10 line 57, figures 7-12, where Baum et al. disclose using a frequency reuse scheme and several pilot codes transmitted by base unit during four baud intervals of a frame).

Consider claim 33, Baum et al. disclose an apparatus for transmitting pilot tones in a multi-sector cell (Abstract, column 5 lines 54-63, element 300 of figure 3), the apparatus comprising: a transmitter (base unit); means for controlling said transmitter to transmit, using a first tone, in said first sector during a first symbol time a first pilot signal having a first pre-selected transmission power (Column 9 line 37- column 10 line 57, where Baum et al. disclose transmitting null baud/symbols); and means for controlling said transmitter to transmit, using said first tone, in said second sector during a second symbol time, which overlaps said first symbol time, a second pilot signal having a second pre-selected transmission power which is different from said first pre-selected transmission

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power (Column 9 line 37- column 10 line 57, where Baum et al. disclose transmitting null baud/symbols).

Consider claims 34 and 35, Baum et al. disclose all the limitations as applied to claim 33 and also disclose means for controlling said transmitter to transmit, using a second tone (frequency/sub-carrier), in said first sector during a third symbol time a third pilot signal having a third pre-selected transmission power (Column 9 line 37- column 10 line 57); and means for controlling said transmitter, using said second tone, in said second sector during a fourth symbol time, which overlaps said third symbol time, a fourth pilot signal having a fourth pre-selected transmission power which is different from said third pre-selected transmission power (Column 9 line 37- column 10 line 57, figures 7-12, where Baum et al. disclose several pilot codes transmitted by base unit during four baud intervals of a frame), wherein said second pre-selected transmission power and said third pre-selected transmission power are the same (Column 9 line 37- column 10 line 57, where Baum et al. disclose transmitting null baud/symbols).

Allowable Subject Matter

10. Claims 8-26 and 29-32 would be allowable if rewritten to overcome the claim objections and rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claims and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Alamouti et al. (US 5,933,421) disclose a method for frequency division duplex communications.

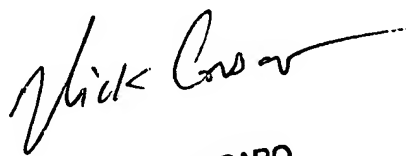
Schiff et al. (US 6,549,780 B2) disclose a method for adjacent service area handoff in communication systems.

Bingham et al. (US 6,035,000) disclose mitigating radio frequency interference in multi-carrier transmission systems.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alejandro Rivero whose telephone number is (571) 272-2839. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AR



NICK CORSARO
PRIMARY EXAMINER